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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,017	09/27/2004	Yasushi Maruta	01070074Aa	1245

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EXAMINER

KARIKARI, KWASI

ART UNIT

PAPER NUMBER

2617

DATE MAILED: 06/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/509,017	MARUTA, YASUSHI	
	<b>Examiner</b>	<b>Art Unit</b>	
	Kwasi Karikari	2617	

**– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –  
Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 27 September 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-11 and 17-23 is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☒ Claim(s) 1-4, 12-16 and 24-28 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 September 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>9/27/04; 3/31/05</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 2617.

### **Information Disclosure Statement**

2. The information disclosure statement (IDS) submitted on 09/27/2004 and 03/31/2005 are in compliance with the provision of 37 CFR 1.97, have been considered by the Examiner, and made of record in the application file.

### ***Drawings***

3. Figure 7 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

4. Claims 1-28 are objected to because of the following informalities:

- a. Applicant uses “characterized by having ” in claims 1 and 13; “characterized” in claims 2,3, 5-11,14,15,17-23,25 and 26; and “characterized by comprising” in claims 4,12,16,24,27 and 28. Examiner suggests using “consisting: or comprising:” in claims 1-28.
- b. Applicant uses “A multi-beam antenna transmitter/receiver” in claims 2-12,14-24 and “A transmission beam selection method” in claim 26. The Examiner suggests using “The multi-beam antenna transmitter/receiver” in claims 2-12,14-24 and “The transmission beam selection method” in claim 26. Appropriate corrections are required.

#### **Claim Rejections - 35 USC § 112**

- 5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

- a. Claims 1,27 and 28 are both an apparatus and the method steps of using the apparatus, which renders the claimed invention indefinite under 35 U.S.C. 112, second paragraph (See Ex parte Lyell, 17 USPQ2d 1548 (Bd. Pat. App. & Inter. 1990)).
- b. Claims 1-28 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Applicant uses claimed limitations: “user”. This limitation is not clearly presented/explained in the specification, thus, hampering one of ordinary skill in the art to clearly interpret the Applicant’s claimed language.

**Claim Rejections - 35 USC § 102**

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1-4, 12-16 and 24-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsuoka et al., (U.S. 20010049295 A1), (hereinafter Matsuoka).**

Regarding **claims 1 and 13**, Matsuoka discloses a multi-beam antenna transmitter/receiver/method (pluralities of antennas 10-1 to 10-N, 20-1 to 20-N for transmission/reception, (see Pars. [0053 and 0075]; Figs. 1 and 4) characterized by having:

a plurality of reception beams and a plurality of transmission beams (pluralities of antennas 10-1 to 10-N, 20-1 to 20-N for transmission/reception, see Pars. [0053 and 0075]; Figs. 1 and 4), and

selecting the transmission beam on the basis of overall reception qualities calculated from reception qualities of path delays of user signals present in the plurality of reception beams (transmission is selected on the basis of the estimated arrival angle range that is associated with the average received power of desired wave, see Pars. [0065-66]; and delay profiles estimates associated with received signal,

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see also Pars. [0056-6, 0075 and 0148-154]).

Regarding **claims 2 and 14**, as recited in claims 1 and 13, Matsuoka discloses a multi-beam antenna transmitter/receiver/method, characterized in that

the reception beam is selected on the basis of the overall reception quality  
(see Par. [0027], and

the transmission beam having a direction which coincides with or is close to a direction of the selected reception beam is selected (see Par. [0029]).

Regarding **claims 3 and 15**, as recited in claims 1 and 13, Matsuoka discloses a multi-beam antenna transmitter/receiver/method, characterized in that reception power or an SIR (Signal to Interference Ratio) is used as an index of the reception quality (the highest received power is associated with and enhanced SNR, see Par. [0070]).

Regarding **claims 4 and 16**, as recited in claims 1 and 13, Matsuoka discloses a multi-beam antenna transmitter/receiver/method, characterized by comprising:

a reception array antenna in which a reception antenna element is arranged  
(antennas 10-1 to 10-N and 20-1 to 20-N);

radio reception means for receiving an output from the reception antenna element, performing a reception process for an input signal, and outputting the signal  
(reception antenna 13, see Pars. [0055-61]);

reception beam formation means for receiving an output from said radio reception means and forming a reception beam (reception beam selector 22, see Par. [0076]);

user demodulation means for receiving an output from said reception beam formation means (see Par. [0057]),

calculating an overall reception quality for a path delay/reception beam number (inherent) of a user signal present in the reception beam to output a user transmission beam number (estimation section, see Par. [0056]), and outputting user reception data using the path delay/reception beam number (see Par. [0055]);

user modulation means for receiving user transmission data, performing a modulation process, and outputting a modulated user signal (see Par. [0057]);

user transmission beam switching means for receiving the user transmission beam number (inherent) and the modulated user signal, and outputting the modulated user signal so as to form a transmission beam corresponding to the user transmission beam number (see Par. [0076]);

transmission beam formation means for receiving an output from said user transmission beam switching means, and forming the transmission beam (beam forming section 22, see Pars. [0066 and 0076]);

radio transmission means for receiving an output from said transmission beam formation means, performing a transmission process for an input signal, and outputting the signal (transmission beam selector 24, see Par. [0076 and 0081]); and

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a transmission array antenna in which a transmission antenna element for transmitting an output from said radio transmission means is arranged (transmission beam selector 24, see Par. [0076, 0081] and Figs. 2-4).

Regarding **claims 12 and 24**, as recited in claims 1 and 13, Matsuoka discloses a multi-beam antenna transmitter/receiver/method, characterized by comprising:

means for forming the plurality of reception beams means for forming the plurality of transmission beams ( pluralities of antennas 10-1 to 10-N, 20-1 to 20-N for transmission/reception, (see Pars. [0053 and 0075]; Figs. 1 and 4);

means for calculating the overall reception qualities for the respective reception beams by adding values of the reception qualities for the path delays of the user signals (transmission is selected on the basis of the estimated arrival angle range that is associated with the average received power of desired wave, see Pars. [0065-66]; and delay profiles estimates associated with received signal, see also Pars. [0056-61 and 0148-154]); and

means for selecting a reception beam excellent in overall reception quality and selecting a transmission beam having a direction which coincides with or is close to a direction of the selected reception beam (see Pars. [0027 and 0029]).

Regarding **claim 25**, Matsuoka discloses a transmission beam selection method characterized by



selecting a transmission beam on the basis of overall reception qualities calculated from reception qualities of path delays of user signals present in reception beams (transmission is selected on the basis of the estimated arrival angle range that is associated with the average received power of desired wave, see Pars. [0065-66]; and delay profiles estimates associated with received signal, see also Pars. [0056-61, 0075 and 0148-154]).

Regarding **claim 26**, as recited in claim 25, Matsuoka discloses a transmission beam selection method, characterized in that the reception beam is selected on the basis of the overall reception quality, and the transmission beam having a direction which coincides with or is close to a direction of the selected reception beam is selected (see Pars. [0027 and 0029]).

Regarding **claim 27**, Matsuoka discloses a base station characterized by comprising: a multi-beam antenna transmitter/receiver which has a plurality of reception beams and a plurality of transmission beams (pluralities of antennas 10-1 to 10-N, 20-1 to 20-N for transmission/reception, see Pars. [0053 and 0075]; a base station, see Par. [0050]; and Figs. 1 and 4), and

selects the transmission beam on the basis of overall reception qualities calculated from reception qualities of path delays of user signals present in the plurality of reception beams (transmission is selected on the basis of the estimated arrival angle range that is associated with the average received power of desired wave, see Pars. [0065-66]; and delay profiles estimates associated with received signal,

see also Pars. [0056-61, 0075 and 0148-154]).

Regarding **claim 28**, Matsuoka discloses a mobile station characterized by comprising:

a multi-beam antenna transmitter/receiver which has a plurality of reception beams and a plurality of transmission beams (pluralities of antennas 10-1 to 10-N, 20-1 to 20-N for transmission/reception, see Pars. [0053 and 0075]; Figs. 1 and 4), and

selects the transmission beam on the basis of overall reception qualities calculated from reception qualities of path delays of user signals present in the plurality of reception beams (transmission is selected on the basis of the estimated arrival angle range that is associated with the average received power of desired wave, see Pars. [000019, 0021, 0065-66]; and delay profiles estimates associated with received signal, see also Pars. [0056-61 and 0148-154]).

7. ***Allowable Subject Matter***

Claims 5-11 and 17-23 and are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims

***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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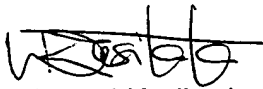
**Obayashi (U.S. 7,062,273)** teaches a mobile communication terminal apparatus having array antenna for communication to at least one base station.

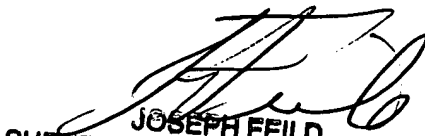
**Yukitomo et al., (U.S. 6,240,149)** teaches adaptive transmission diversity apparatus and adaptive transmission method.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kwasi Karikari whose telephone number is 571-272-8566. The examiner can normally be reached on M-F (8 am - 4pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Feild can be reached on 571-272-4090. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8566.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Kwasi Karikari  
Patent Examiner.

  
JOSEPH FEILD  
SUPERVISORY PATENT EXAMINER